

**CLAIMS**

1. A method for manufacturing a fibre mat using vegetable fibres, where the fibres are pre-treated, as the plants are harvested by cutting and threshing, where plant stems are retted wholly or partially and thereafter shortened and separated for establishing a fibre mass comprising mainly single fibres with lengths within the desired interval between 0.1 and 30 mm, where drying is possibly performed for providing a desired water content, where the fibres are randomly oriented, as the mat is formed by a dry forming process, and where the mat is fixed, as inter-fibre bonds at least partially are established between the single fibres as these are more or less fibrillated.

2. A method according to claim 1, characterised in that the pre-treatment comprises a shortening of the fibres to a length between 3 and 20 mm and especially between 4 and 15 mm.

3. A method according to claim 1 ~~or 2~~, characterised in that the fibres are retted partially on the field and that they afterwards are imparted a possible further controlled retting in water containing enzymes before the shortening.

4. A method according to <sup>claim 1</sup> ~~any preceding claim~~, characterised in that the inter-fibre bonds are established by the application of organic binders, synthetic organic binders or natural binders.

5. A method according to <sup>claim 1</sup> ~~any preceding claim~~, characterised in that the fibres are selected among flax and hemp.

6. A method according to <sup>claim 1</sup> ~~any preceding claim~~, characterised in that the stems are scutched in a hammer mill and shortened to a desired length, that fibres within a desired length interval are separated by use of a rotating riddle, that the fibre fraction is dry formed into a mat as the fibres are blown into a forming head disposed above a forming wire.

a 7. A method according to <sup>claim 1</sup> ~~any preceding claim~~, characterised in that the formed mat is fixed by addition of between 0 and 50 % binder.

a 8. A method according to <sup>claim 1</sup> ~~any preceding claim~~, characterised in that the formed mat contains between 0 and 10 % shives.

9. A method according to claim 1, characterised in that shortening and separation of fibres is performed in the dry condition, and that the pre-treatment comprises pulping of the fibres as the fibres are boiled in pure water under pressure or boiled in an extruder, that they are treated chemically, for example by adding base, that they are washed and that they are dried before the formed fibres are dry formed.

a 10. A fibre mat manufactured by the method according to <sup>claim 1</sup> ~~any preceding claim~~, characterised in that it has the character of a non-woven mat and is made with thickness' between 2 and 300 mm and with gram weights between 30 and 8000 g/m<sup>2</sup>.

11. Use of a fibre mat manufactured by a method according to <sup>claim 1</sup> ~~any of the claims 1 - 9~~ as isolating mat, as absorbing fibre mat, as element in a moulded composite product or as element in a strongly reinforced composite product.

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